Safety in Self Driving Cars

(Self Driving Car Dilemma)

Group I - IT Department
Problem: What should the self-driving car do?

Actors:
- Passenger(s)
- Pedestrian(s)
- Other car passenger
- Car companies
- Society
Solution 1: Always minimize passenger(s) risks

- **Passenger(s):** ++
  - The car maximizes your safety and the safety of loved ones
- **Pedestrian(s):** - -
  - Great danger
- **Other car passenger(s):** ++
  - They are not involved at all
- **Car companies:** ++
  - People trust their cars, they maximize their profit
- **Society:** +/-
  - There is the risk of killing people even though everyone could have survived
Solution 2: Minimise chance of death

- **Passenger(s):** -
  - Lower trust in their own car if it might hurt them on purpose

- **Pedestrian(s):** +
  - Least likely to be involved since they’re the ones most exposed

- **Other car passenger(s):** - -
  - They are very likely involved in the crash even though they had nothing to do with the problem in the first place

- **Car companies:** +/-
  - Can claim that they are prioritizing people's lives
  - Buyers might trust their cars less and influence car’s sales negatively

- **Society:** ++
  - It saves most lives, but might involve higher health care costs
Solution 3: Minimise number of people involved

- **Passenger(s):** -
  - Unpredictable outcome. Depends on how many pedestrians and people are inside of the cars

- **Pedestrian(s):** -
  - Unpredictable outcome. Depends on how many pedestrians and people are inside of the cars

- **Other car passenger(s):** -
  - Unpredictable outcome. Depends on how many pedestrians and people are inside of the cars

- **Car companies:** +/-
  - Can claim that they are prioritizing people's lives
  - Buyers might trust their cars less and influence car's sales negatively

- **Society:** +
  - Minimizes involved health care costs, but everyone is worried
Solution 4: Decide Random

- **Passenger(s):** -
  - Unpredictable outcome. Depends on your luck

- **Pedestrian(s):** -
  - Unpredictable outcome. Depends on your luck

- **Other car passenger(s):** -
  - Unpredictable outcome. Depends on your luck

- **Car companies:** +/-
  - Easiest implementation
  - Buyers might trust their cars less and influence car’s sales negatively

- **Society:** -
  - Solution is similar to what we would have with human drivers (no improvement over human drivers but not worse either)
Solution 5: Give decision to driver

- **Passenger(s): +**
  - They have full control

- **Pedestrian(s): +/-**
  - No change from non self driving cars. They need to trust other people to make the “correct decision”

- **Other car passenger(s): +/-**
  - No change from non self driving cars. They need to trust other people to make the “correct decision”

- **Car companies: +**
  - Avoid responsibility
  - Buyers trust their cars, so good selling potential

- **Society: +/-**
  - Solution is similar to what we would have with human drivers (no improvement over human drivers but not worse either, so it might involve more people than necessary)
# Autonomy Matrix

<table>
<thead>
<tr>
<th></th>
<th>Always minimize passenger(s) risk</th>
<th>Minimise chance of death</th>
<th>Minimise number of people involved</th>
<th>Decide random</th>
<th>Give decision to the driver</th>
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</thead>
<tbody>
<tr>
<td>passengers</td>
<td>++</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>pedestrians</td>
<td>- -</td>
<td>+</td>
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<td>Other car passengers</td>
<td>++</td>
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Questions?